

REMARKS/ARGUMENTS

Claims 1-5, 8, and 10-19 are pending in the Application. Claim 1-5 and 8 were previously presented. Previously presented Claims 5-9 were withdrawn from further consideration by the Examiner (office Action dated May 12, 2009 (OA), page 1) as drawn to inventions non-elected with traverse in the Response to Restriction Requirement dated January 22, 2009. Previously presented Claims 6, 7, and 9 are now canceled. Applicant respectfully requests rejoinder of withdrawn Claim 5 drawn to a process of producing the alkanol-free composite material of Claim 1 which comprises mixing the components thereof with heating as appropriate and currently amended Claim 9 directed to a composition or formulation comprising the alkanol-free composite material of Claim 1 and a surfactant which exhibits an interfacial tension of less than 45 mN/m at 20°C at 5 g/l in water. It should be apparent to the Examiner from the supporting Specification at page 11, line 28, to page 13, line 12, that previously presented process Claim 5 and currently amended composition Claim 9 comprise steps and additives which do not render them patentably distinct from the invention defined by Claim 1 and the rights to exclude others from making and using the invention thereof.

Claims 10-19 are new. Support for new Claims 12-14 is found in the Specification at page 3, lines 16-17. Support for new Claims 10, 11, and 15-17 is found in the Specification at page 4, line 33, to page 5, line 3. Support for new Claims 18-19 is found in the Specification at page 10, line 24, to page 11, line 6; and page 13, line 24, to page 14, line 6 (Examples 1-2). Support for currently amended Claim 9 is found in the Specification at page 11, line 28, to page 13, line 12.

No new matter is presented.

### Claim Interpretation

Independent Claim 1 is directed to a solid, water-free and alcohol-free composite material comprising water-insoluble particles or pigments in a mixture with at least one C<sub>4-8</sub> alkyl alkoxylate. The at least one C<sub>4-8</sub> alkyl alkoxylate in the claimed mixture, i.e., each and every C<sub>4-8</sub> alkyl alkoxylate in the claimed mixture, must be “alkanol-free” (Original Claim 1). The Specification defines “alkanol-free” as follows (Spec., 4, ll. 26-27):

The expression “alkanol-free” refers to composite materials with no gas-chromatographically (GC) measurable amounts of alkanols, especially C<sub>n</sub>H<sub>2n+1</sub>OH.

While Applicant’s Specification teaches that “‘water-free’ refers to a product obtained after treatment by customary drying techniques” (Spec., p. 4, ll. 16-24), it also teaches that “alkanol-free” products are NOT obtained by customary drying techniques. For example, the Specification teaches (Spec., 2, ll. 1-4; emphasis added):

Presently ethoxylates of lower alcohols are used as wetting agents. As an inevitable result of their preparation, however, such products frequently include quantities of alcohol, which in turn contributes critically to the rapid wetting and in the case of very short wetting times may be the sole wetting component.

To achieve Applicant’s invention, “[t]he alkoxylation and any subsequent purification of the alkoxylation product are conducted in such a way that the alkoxyates are alkanol-free” (Spec., p. 5, ll.16-18). Thereafter, at pages 5-12, Applicant’s Specification describes and enables specific processes by which to prepare “alkanol-free” products.

One such process for preparing an “alkanol-free” product is described in the Specification at page 10, line 15, to page 12, line 4, and reflected in previously presented Claim 3 and new Claims 18-19. The Specification teaches (Spec., p. 11, ll. 1-6):

The preparation in this case takes place starting from alcohol-free, preferably pure alkyl glycols and alkyl diglycols, and not as described above, from alkanols, by alkoxylation. The product mixtures therefore also contain no remaining alkanols, but only, at most, alkyl glycols. . . . As a result of the preparation process the alkyl glycol alkoxylates are free from alcohols.

To amplify and corroborate the teaching in Applicant's disclosure, the Specification points to commonly assigned WO 03/60049, published July 24, 2003 (of record), and its English counterpart Noerenberg ( Noerenberg et al., US 2005/0049167, published March 3, 2005)(of record). Noerenberg at [0011, 0025, and 0028] sets the background for Applicant's invention with substantially the same discussion of the importance of, and need for, "alkanol-free" products. The Examiner should take particular notice of the Specification's teaching that products with no alcohols are largely free from odor (Spec., p. 11, ll. 28-29), yet they unexpectedly provide substantially the same dispersibility as the prior art products (Spec., p. 13, l. 3, to. p. 14, l. 6; p. 2, ll. 26-29).

In short, Applicant's claimed composite material is "alkanol-free" because it employs an alkoxylation product which is "alkanol-free". Alkylation products currently in use are NOT "alkanol-free". See Noerenberg [0011, 0025].

Rejection of Claims 1-4 under 35 U.S.C. 103 over Roberts

Previously presented Claims 1-4 were rejected under 35 U.S.C. 103 in view of Roberts (U.S. Patent 6,544,328, issued April 8, 2003)(OA, p. 2). The rejection should be withdrawn for the following reasons.

According to the Examiner, Roberts teaches a pigment such as titanium oxide coated with at least one surface active agent such as an ethoxylated sorbitan derivative, e.g., ethoxylated sorbitan monooleate, citing Roberts' Abstract and Example 1 at column 6, lines 23-45. Ethoxylated sorbitan monooleate is an ester of an ethoxylated polyol (1, 2, 3, 4, 5, 6-hexane hexol) and a fatty acid. It is one of Roberts' preferred surface active agents. However, neither fatty acid esters of ethoxylated polyols nor any other surface active agent preferred and claimed by Roberts is a compound of general formula (I) or even resembles a compound of general formula (I) in Applicant's claimed composite material. Of Robert's other preferred surface active agents, the ones closest to a compound of Applicant's general

formula (I) are ethoxylated mono and diglycerides which are also ethoxylated polyols having 3 or more OH groups. Thus, the Examiner's finding that Roberts' ethoxylated sorbitan esters and/or ethoxylated mono and diglycerides "read . . . on . . . formula (I)" is clearly erroneous. Unfettered by the clearly erroneous finding that Roberts' ethoxylated sorbitan esters and/or ethoxylated mono and diglycerides read on Applicant's general formula (I), the Examiner further finds (OA, p. 3, ll. 5-6), "[I]t is the Examiner's position that since it's dried, there is no water left with the coated pigment particles."

While the Examiner's finding that conventional drying would have made Roberts' coated pigment particles "water-free", the Examiner does not mention the "alkanol-free" restriction on the alkoxylation product component of Applicant's claimed "alkanol-free composite material". There is no support whatsoever in this record for the proposition that a conventionally dried alkoxylation product is also "alkanol-free". The limitation is critical to Applicant's claimed invention, and yet the Examiner has not established any factual basis for finding that Roberts' alkoxylation products are "alkanol-free" or any reasonable teaching, suggestion or motivation that persons having ordinary skill in the art would have gotten from Roberts' disclosure to make and use, or even attempt to make and use, inorganic pigments coated with an alkoxyated product which is "alkanol-free". Applicant can find no incentive in Roberts to make surface active agents which are "alkanol-free". To the contrary, Applicant's specification and Noerenberg (of record) teach that ethoxylated surface active agents of the kind represented by general formula (I) in Applicant's claims are not customarily or conventionally "alkanol-free". There is no evidence of record to the contrary. Applicant's specification and Noerenberg (of record) both suggest that alcohol residues in surface active alkoxylation products are effective as wetting agents and are therefore customarily left in the products to enhance the their surface active properties (Spec., p. 1, l. 13, to p. 2, l. 4; Noerenberg [0002-0004]). When the prior art teaches away from the product

claimed, it is more likely to be nonobvious. *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, \_\_\_\_ (2007).

There is no reasonable suggestion to make an “alkanol-free” product and no reason at all for a person having ordinary skill in the art to expect a surface active agent from which alcohol residues which are known to enhance wetting are removed would adequately coat and disperse an inorganic pigment coated therewith in an aqueous system after it is dried.

Without a reasonable suggestion to do what Applicant has done, without any reasonable expectation for success, and with teaching that appears to lead away from what Applicant has done, there is scant factual basis for the Examiner’s conclusion of obviousness. *In re O’Farrell*, 853 F.2d 894, 903 (Fed. Cir. 1988); *In re Piasecki*, 745 F.2d 1468, 1472 (Fed. Cir. 1984).

However, without any other reference or claims thereto and no explanation or discussion thereof, Roberts summarizes (Roberts, col. 1, ll. 62-66) and states (Roberts, col. 3, ll. 1-5):

The surface active agents which can be utilized in accordance with the present invention include alkyl alcohols ethoxylated with from about 4 to about 14 ethylene oxide groups and wherein the alkyl groups have from about 6 to about 16 carbon atoms . . . .

The Examiner properly dismissed Roberts’ unsupported disclosure. Roberts appears merely to be inviting experimentation, because the statement is not supported by any other description or representative surface active materials, not supported by examples, not supported by a general discussion or formulas, not supported by citations to prior art teachings, not supported by identification of commercially available products, and not supported by a description which would have enabled persons having ordinary skill in the art to make and use the materials. In fact, the disclosure appears to be based more on

speculation than on fact. Patentability should never be rejected based on speculation. *In re Steele*, 305 F.2d 859, 862 (CCPA 1962).

At best, Roberts generally describes compounds which appear to be encompassed by Applicant's general formula (I). At worst, Roberts would have suggested surface active compounds of general formula (I) to persons having ordinary skill in the art. Regardless, the "alkanol-free" composite material Applicant claims comprising an "alkanol-free" compound of general formula (I) is not described or suggested, and would not have been obvious in view of, Roberts' speculative teaching. Roberts' disclosure would not have led persons having ordinary skill in the art to make and use an "alkanol-free" composite material Applicant claims with reasonable expectation of success and would not have enabled persons having ordinary skill in the art to make and effectively use the subject matter Applicant claims without undue experimentation. In order to describe Applicant's "alkanol-free" composition, the prior art must both envision and enable one of ordinary skill in the art to make and use it without undue experimentation. *See Inpax Labs, Inc., v. Aventis Pharm. Inc.*, 545 F.3d 1312, 1314 (Fed. Cir. 2008). Roberts does nothing of the kind. In order to render Applicant's "alkanol-free" composition obvious under 35 U.S.C. 103, the prior art must both suggest the claimed invention and enable one skilled in the art to make and use it. *In re Hoeksema*, 399 F.2d 269, 274 (CCPA 1968). Again, Roberts does nothing of the kind. To the contrary, both Applicant's Specification (Spec., 2, ll. 1-4; emphasis added) and Noerenberg (Noerenberg [0011]) teach:

[A]lcohol ethoxylates of lower alcohols are currently used as suitable wetting agents. However, as a result of the preparation, such products often contain amounts of alcohol, which again contribute decisively to the rapid wetting and, in cases of very short wetting times, may be the sole wetting component.

The object of Applicant's invention is to provide composite materials which exhibit improved wetting behavior and are easy to incorporate into a variety of formulations (Spec.,

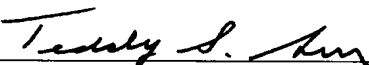
p. 2, ll. 26-29). Applicant's "alkanol-free" composite materials have the additional benefit of being free from odor (Spec., p. 11, l. 28). The prior art knew that alcohol was the main wetting agent in alkoxylation products of general formula (I), but it did not know that the alcohol wetting agent was not necessary for dispersability. Applicant unexpectedly discovered that water-insoluble particles or pigments mixed with "alkanol-free" alkoxylation compounds of general formula (I) could still be effectively dispersed in water-based formulations (Spec., p. 13, ll. 3-12). Roberts reasonably would not have led persons having ordinary skill in the art to the "solid, water-free and alkanol-free composite material" Applicant claims. At best, Roberts' disclosure reflects what is customary in the art.

For the reasons stated herein, Applicant's claims are in condition for allowance.

Early notice of allowance is respectfully requested.

Respectfully submitted,

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